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# Dimensions driving Business Student Satisfaction in Higher Education

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## Abstract

**Purpose** – This study seeks to identify the dimensions of business student satisfaction in the Malaysian private higher educational environment and evaluate the influence that demographic factors have on satisfaction.

**Design/methodology/approach** – A questionnaire was developed and distributed to 1200 undergraduate business students at four PHE in Malaysia. Exploratory factor analysis was used to identify the underlying dimensions that drive student satisfaction. ANOVA and t - tests were conducted to evaluate the influence that demographic factors have on the results.

**Findings** – Factor analysis resulted in the adoption of a 12-factor solution from an original set of 53 satisfaction items. The results also indicated the influence of demographic factors on the level of business student satisfaction.

**Originality/value** - This study identified 12 factors or the underlying dimensions that drive business student satisfaction in the Malaysian PHE. The 12 factors are: professional comfortable environment; student assessments and learning experiences; classroom environment; lecture and tutorial facilitating goods; textbook and tuition fees; student support facilities; business procedures; relationship with teaching staff; knowledgeable and responsive faculty; staff helpfulness; feedback; and class sizes. Understanding these factors could help educational institutions to better plan their strategies and inform academics interested in studying student satisfaction.

**Keywords** Student satisfaction, underlying dimensions, demographic factors, survey, private higher education, Malaysia

**Paper type** Research paper

## Introduction

The educational environment is not only extremely dynamic, it is also challenging. Competition is intensifying in the higher education (HE) sector, in both public and private provision. Public comparisons between institutions in the form of various ranking tables are more widely available than ever before. The emergence of global ranking scales over the last few years has focused considerable attention on higher education. The

spotlight is being put on universities that are increasingly being compared nationally and internationally. To a certain extent, rankings have helped to foster greater accountability as well as increased pressure on Universities to enhance their management practices (EUA, 2011). There are six major university ranking systems in the world, of which one is the Times Higher Education World University Rankings (THE Rankings). THE Rankings adopted a new ranking system, which consist of 13 indicators across five broad categories of which one is teaching-the learning environment (The STAR, 26 September, 2010). This positive development in higher education shows the importance of educational institutions understanding student satisfaction if they want their ranking to be favourable. Student satisfaction is a short-term attitude resulting from the evaluation of a student's experience with regard to the education services rendered (Elliot and Healy, 2001)

As indicated by Alves and Raposo (2009) identifying the factors that influence student satisfaction is critical for educational institutions. However, there is a lack of consensus in the existing literature as to how this can be achieved and previous studies utilise models that vary in terms of the number of dimensions considered and the methodologies used to examine the strengths and significance of the relationships (Douglas *et al.*, 2006; Elliot and Shin, 2002; Guolla, 1999; Gruber *et al.*, 2010; Petruzellis *et al.*, 2006; and Smith, 2004).

In Malaysia, education is a leading industry and plays a vital role in national development. The current educational environment in Malaysia is also very dynamic, competitive and challenging. Public comparisons of Malaysian private higher educational (PHE) institutions through an official ranking system called SETARA also emphasises the importance of understanding student satisfaction. The total number of students enrolled in higher educational institutions in Malaysia stood at 1,134,134 in 2010, of which 565,403 students (49.9%) are enrolled at the private educational institutions (MOHE, 2010). Private higher institutions have contributed enormously to the Malaysian economy via foreign exchange earnings from the influx of foreign students, which made up of 86, 923 international students from 141 countries. From this figure, 62, 709 students (72%) are enrolled at the private educational institutions (MOHE, 2010).

The objectives of this paper are to identify the underlying dimensions that drive business student satisfaction in the Malaysian PHE environment and to evaluate the influence of factors such as gender, year of study, programme of study, semester grade, and nationality have on the results. We add to and expand upon, previous studies by providing new insights into the general evaluative dimensions of student satisfaction which may enable education providers to focus on a smaller set of Key Performance Indicators (KPI) than some studies would suggest. Such knowledge could assist educational institutions and academics to better plan the development and implementation of strategies aimed at satisfying student needs. We provide practical information about what and how students with different levels of study; different programmes of study; different academic performances or semester grades; gender; and nationality consider important in drivers of satisfaction. This information provides valuable inputs to educational institutions to enhance their quality education and service levels to meet the different needs of specific types of students and be more competitive.

We focus on business student satisfaction as business programmes are a popular choice among students in Malaysia as compared to other programmes (MOHE, 2007).

Despite criticisms (Arambewela and Hall, 2009; Bigne *et al.*, 2003; Prugsamatz *et al.*, 2006; Shekarchizadeh *et al.*, 2011; and Yunus *et al.*, 2009), most studies on student satisfaction in Higher Education and in Malaysia have utilised SERVQUAL and SERVPERF models to measure student satisfaction. We take a different approach from these studies by adopting and adapting the “service-product bundle” by Douglas *et al.*, (2006) which we argue is more comprehensive and suitable for both the Malaysian PHE and the wider HE market. The strengths of the “service-product bundle” is that, unlike the SERVQUAL and SERVPERF models, it includes a greater range of variables that may influence student satisfaction; it has not been criticised in the higher education context; and it was specifically designed for the higher education sector.

This paper is organised as follows. The next section presents a review of literature which is then followed by the methodology, and the results section. The final section of this paper discusses the conclusion, providing some implications as well as addressing the limitations and future research directions.

## **Literature Review**

### *Student Satisfaction*

According to Elliott and Shin (2002), student satisfaction refers to the favourability of a student’s subjective evaluation of the various outcomes and experiences associated with education. HE institutions are focusing on understanding the factors that influence student satisfaction as well as attempting to improve it. Recent research on student satisfaction has developed models for examining student satisfaction in the HE sector. The relationship between student learning outcomes and satisfaction has been assessed and attempts have been made to deconstruct the overall concept of student satisfaction (Duque and Weeks, 2010; Gruber *et al.*, 2010; Wiers-Jenssen *et al.*, 2002). Researchers such as Rowley, (2003) and Tapp *et al.*, (2004) believe that higher educational institutions will benefit from developing relationships with their students as this will provide a competitive edge. According to O’ Driscoll (2012), issues such as quality of student life and other non-institutional factors need to be accounted for in offering a more comprehensive explanation of student satisfaction.

Alves and Raposo (2009) suggest that understanding the formation process of student satisfaction, as well as valid and reliable ways to measure it, should be the task of educational institutions. Reliable measurements of student satisfaction will enable educational institutions to have a clear view of their existing situation and allow comparisons with other educational institutions. Elliot and Shin (2002) note that focusing on student satisfaction enables universities to re-engineer their organizations to adapt to students’ needs and at the same time create a system that allows continuous monitoring of the effectiveness of meeting or exceeding their needs. They further indicate that student satisfaction provides an avenue through which a competitive advantage could be achieved in HE institutions. Khosravi *et al.*, (2013) add that addressing the demands and needs of students is critical for higher educational institutions if they want to be competitive. According to Elliott and Shin (2002), student satisfaction refers to the favourability of a student’s subjective evaluation of the various outcomes and experiences associated with education. It is being shaped continually by repeated

experiences in campus life. Student satisfaction is a complex concept consisting of several dimensions (Marzo-Navarro *et al.*, 2005a, b; Richardson, 2005). Appleton-Knapp and Krentler, (2006) state that a variety of factors seem to influence student satisfaction and the factors fall into personal factors related to the student (gender, temperament, preferred learning styles and grade point average) and institutional factors related to the educational experience (instructor teaching style and quality of instruction). The following subsection examines service quality and student satisfaction as measuring student satisfaction requires adopting a suitable service quality model.

#### *Service Quality and Student Satisfaction*

Satisfaction is an outcome of service quality (Bolton and Drew, 1991) Relating service quality to student satisfaction; Helgesen and Nasset (2007) indicate that the management of the educational institutions should focus on service quality, information, and facilities to increase the satisfaction and loyalty of the students. Purgailis and Zaksa's (2012) findings suggest that student-perceived quality correlates with factors such as academic staff, study content, readiness for labour market and acquired skills which consequently have an influence on student loyalty to higher educational institutions. A study by Gruber *et al.*, (2010) indicates that student satisfaction reflects the perception of service quality differences exhibited by the educational institutions. According to Alves and Raposo (2010), perceived quality develops a favourable image in the minds of students which subsequently leads them to satisfaction. Sultan (2013) suggests there are three core aspects of service quality evaluation namely: academic, administrative, and facilities in the context of sample institutions.

Among the popular models utilised to measure student satisfaction are SERVQUAL and SERVPERF. Studies in higher education adopting SERVQUAL and SERVPERF are summarised in Table I. Both models utilised five generic dimensions comprising of tangibles, reliability, responsiveness, empathy, and assurance. SERVQUAL considers both the expectations and perceptions of its customers' evaluation but SERVPERF merely considers the perceptions of the customers. Despite criticisms, what could be observed is that SERVQUAL is able to analyse customer expectations, which are required in making strategic decisions, and SERVPERF can also guide future decision making through assessing performance perceptions.

#### **Insert Table I Studies in Higher Education adopting SERVQUAL and SERVPERF Models**

Other models of service quality and student satisfaction have also been adopted by researchers and are summarised in Table II. The models vary in terms of the number of dimensions considered and the methodologies used to examine the strengths and significance of the relationships. Douglas *et al.*, (2006) utilised 60 variables, grouped under the "service-product bundle." Namely: physical and facilitating goods; implicit service; and explicit service. Unlike the SERVQUAL and SERVPERF models, it provides a more comprehensive range of variables that influence student satisfaction. Elliot and Shin (2002) measure student satisfaction using a survey instrument called Student Satisfaction Inventory (SSI) consisting of 11 dimensions with 116 items. Among

the dimensions are academic advising effectiveness, campus climate, campus life, campus support services, concern for individual, instructional effectiveness, recruitment and financial aid effectiveness, registration effectiveness, campus safety and security, service excellence, and student centeredness. This study indicates that measuring student satisfaction accurately is not an easy task as there are issues that could influence the results of the study such as the manner the questions asked as well as the measurement timing. Petruzellis *et al.*, (2006) developed a questionnaire based on 19 educational services which consists of both the teaching and non-teaching aspects offered at a University in Italy. The outcomes of this study indicate that universities have to focus efforts on improving the quality teaching and non-teaching aspects so as to respond to the needs of the students.

### **Insert Table II Other Models of Service Quality and Student Satisfaction**

Several studies have been conducted in Malaysia on service quality and student satisfaction of which most utilised SERVQUAL to measure student satisfaction. A study by Yunus *et al.*, (2009) evaluated the effect of service quality and perceived value on student satisfaction at a public university in Sarawak. Poh and Samah (2006) explore whether undergraduate students are satisfied with the quality of education at an e-learning university in Kuala Lumpur. Further studies were conducted by Illias *et al.*, (2008) with regards to the differences of demographic factors on student satisfaction and service quality. Hishamuddin *et al.*, (2008) explored the relationship between service quality dimensions and overall service quality with student satisfaction, while Sapri *et al.*, (2009) evaluated the factors that influence student's level of satisfaction with regards to higher educational facilities. Service quality perceptions and the expectations of international postgraduate students at five Malaysian public universities were examined by Shekarchizadeh *et al.*, (2011). These studies are summarised in Table III.

### **Insert Table III Studies conducted in Malaysia on Service Quality and Student Satisfaction**

In summary, various methods, variables, and models have been used to measure student satisfaction. There are strengths and limitations as well as criticisms of the SERVQUAL and other models used. The outcomes of previous studies appear to be different depending on the contexts. In response to these concerns and a critical evaluation of the literature, this study adopts the “service-product bundle” by Douglas *et al.*, (2006) as it seems to be more comprehensive and appropriate to be used in the Malaysian PHE environment. The details of the model will be explained in the methodology section. Apart from taking a different approach, this paper expands the above findings by examining the underlying dimensions of student satisfaction in the Malaysian PHE environment and also evaluates the influence of demographic factors on the results.

#### *The influence of demographic factors on the students*



In this study, the influence that; gender, year of study, programme of study and nationality have on the results are analysed. According to Brody and Hall (1993), Dittmar *et al.*, (2004) and Mattilla *et al.*, (2003), gender may impact on perceptions of interaction quality, physical environment quality, outcome quality and systems quality due to gender role socialization, decoding ability, differences in information processing, traits, and the importance placed on core or peripheral services. Laroche *et al.*, (2000) suggest that females tend to rely more heavily on the service environment and tangible cues in their environment to make service evaluations. Males, on the other hand, consider less information and tend to take shortcuts in making decisions. Males have been found to be outcome-focussed in valuing efficiency more than personal interaction during a typical service interaction compared to females (Mattilla *et al.*, 2003). Iacobucci and Ostrom (1993) find gender differences with regards to the importance placed on core and peripheral services.

With regards to students' year of study, Corts *et al.*, (2000) conclude that there is no significant difference between junior and senior students' perceptions of satisfaction. Hill (1995) finds that students' expectations are stable over time which suggests that they were probably formed prior to arrival at university. However, students who have been studying for longer perceived there was a reduction in their quality experience indicating that this was less stable. Arambewela and Hall's (2009) findings indicate that the importance of the quality factors related to both educational and non-educational services vary among nationality groups.

## **Methodology**

A questionnaire was developed based on Douglas *et al.*'s., (2006) "service-product bundle" in this study. Based on the results of 2 focus groups containing 6 students comprising of a mix of local and international students as well as first, second and third year students, Douglas *et al.*'s., original 60 variables were reduced to a 53-item scale that were valid in the Malaysian higher education sector. The survey instrument consisted of a five-point agreement scale linked to statements about satisfaction (ranging from very unsatisfactory to very satisfactory). Because of high inter-correlations between some of the 53 items a principal components analysis was used to reduce the items to a small, more focussed set of underlying satisfaction dimensions or factors.

A quantitative sample of 1,200 students was drawn from 4 institutions and 300 questionnaires were distributed to each. They were chosen based on their strategic locations relative to the target population, and their accessibility. The survey yielded a total of 823 usable responses; representing a 69% response rate. Stratified random sampling was adopted whereby the first level of stratification involved the year of study (years 1, 2, and 3) and 100 questionnaires have been allocated for each level at each institution. Respondents were then chosen from programmes and classes within the business schools of each institution. Classroom administered surveys were conducted and the classes were randomly selected as this could provide a sample that is representative of the population being studied, hence allowing generalisation.

## **Results**

### *Respondents' Profile*

The 823 student respondents consisted of 49.9 % male and 50.1% female students studying for a mixture of Business Administration (25.9%), Accounting (18.1%), International Business (14.8%), Financial Planning (15.1%), Marketing (18.2%) and Other (7.9%) undergraduate degrees. Thirty-one percent of the students were in their first year of study, 36% in their second year and 33.2% in their third year of study. About 69.7% of students were Malaysian national and 30.3% international students. Approximately 19.3% of students were an A grade average, with 41.9% a B, 30.6% a C and 8.1% a D grade average. Institution 1 has 29.5% of the respondents, 23.6% came from institution 2, 24.6% from institution 3, and finally 22% from institution 4.

#### *Underlying Dimensions of Student Satisfaction*

Factor analysis was conducted to identify the underlying dimensions of the 53 variables that drive student satisfaction. A KMO index of 0.697 and Bartlett's test of sphericity (Sig = 0.000) indicated that the data was suitable for factor analysis. Twelve factors explaining 64.6% of the total variation seem to give the best representation of the underlying dimensions. The initial solution yielded eight factors with eigenvalues of greater than one. Although many exploratory studies adopt an "eigenvalue greater than one criterion (Costello and Osborne, 2005), in order to achieve the minimum threshold of total variance explained of 60 per cent and increase interpretability (Hair *et al.*, 2010), we added four factors which resulted in a 12 factor solution.

A reliability test using Cronbach's alpha was used to confirm the internal consistency of each of the factors and the 53 items in general. The factors are ranked in order based on the proportion of variance explained and labelled accordingly to their factor loadings and presented in Table IV.

### **Insert Table IV Results of Principal Component Analysis-Factor Loadings**

#### *Examining the influences of Demographic Factors on the results*

A one-way ANOVA (Bonferroni method) was conducted to test the relationships between factor scores for the 12 underlying dimensions of satisfaction and the demographic profiles such as year of study; programme of study; and the semester grades of the students. As for gender and nationality, independent t-tests were adopted.

#### *Summary of Differences (ANOVA)*

Thirty-six ANOVA tests have been conducted between the 12 factors driving student satisfaction and the demographic variables of year of study, programme of study and semester grade. From the 36 tests, only 9 tests seem to be significant and are presented in Table V.

### **Insert Table V Summary of ANOVA Results**

#### *Summary of Differences (independent t-tests)*

Twenty-four independent t-tests have been conducted between the 12 factors or the underlying dimensions of student satisfaction and the demographic profiles of gender and



nationality respectively. From the 24 tests conducted, only one test is significant for each profile of gender and nationality and the results are presented in Table VI.

### **Insert Table VI Summary of independent t-tests results**

#### **Discussion**

The results of the analysis revealed that the 12 factors or underlying dimensions that influence business student satisfaction in the Malaysian PHE environment are: professional comfortable environment; student assessment and learning experiences; classroom environment; lecture and tutorial facilitating goods; textbooks and tuition fees; student support facilities; business procedures; relationship with the teaching staff; knowledgeable and responsive faculty; staff helpfulness; feedback; and class sizes. The results provide a more thorough understanding of the dimensions that drive satisfaction and could help educational institutions in their planning and developing appropriate strategies especially the people, process and physical evidence elements.

Results of the ANOVA tests reported that students are more concerned with factors such as student support facilities, class sizes, classroom environment, business procedures, and relationship with the teaching staff as compared to the other factors towards their educational experiences. Year of study, programme of study, and semester grade have a significant impact on students' perceptions of student support facilities and class sizes. Student support facilities consist of the IT facilities, the learning resources centre overall, the vending machines overall, the on-campus cafeteria/ canteen facilities and the recreational facilities. Studies by (Ford *et al.*, 1999; Joseph and Joseph, 1997) also reported the need for these support facilities in creating conducive learning environment to the students. A study by Mai (2005) who identified that the IT facilities caused concern for students also produces the similar findings. A comparative study by Shah and Nair (2011) conducted in three separate studies at three different institutions in two countries, two in Australia and one in the UK found that the facilities which they classify as the learning infrastructure are among their five themes that recur in their studies.

The findings of Douglas *et al.*, (2006) also show the importance of the IT facilities to the students but the other underlying dimensions such as vending machines, on-campus catering facilities, and the recreational facilities do not seem to be high on the students' preferences. Price *et al.*, (2003) also discuss the impact of the facilities on the students in their studies. As for the class sizes, Cuseo (2007) indicates that class sizes have impact on student satisfaction. Coles (2002) discovers that student satisfaction decreases when class sizes are larger in the students' earlier cohorts as well as when students are taking the compulsory core modules rather than the modules that are optional. Another factor, faculty contacts have received wide attention in student satisfaction studies. Elliot and Shin (2002) find this factor to be directly impacting student satisfaction with the university performance. Studies by Douglas *et al.*, 2006; and Elliot and Healy 2001 also report similar findings.

Students also want educators to be approachable and accessible to them and to show concern to their needs. According to Kuh *et al.*, (2005), relationships between students

and the teaching staff are important towards student success at the educational institutions. They further state that approachability and accessibility of the teaching staff inside and outside the class is required for effective student learning to take place. Classroom environment and business procedures are the other two factors that the results revealed to be significant. Students want the classroom environment to be conducive for learning as the variables that load highly on this factor include the decoration, layout, furnishings, teaching and learning equipment, lighting, level and cleanliness and the lecture and tutorial rooms overall. As stated earlier by Oldfield and Baron (2000) and Wakefield and Blodgett (1994), students spend a lot of time within the classroom environment, as such; they would prefer an environment which is comfortable and conducive for learning. Another significant factor in this study is the business procedures, which involve the students' interaction with the various business offices at the educational institutions. Some measures have to be taken to ensure that students are happy and satisfied with the interactions as those will lead to their forming of their perceptions of the respective educational institutions.

Further observation on the results of the ANOVA tests showed that in this study, year 1 students are more satisfied with the student support facilities and the class sizes as compared to the year 2 and year 3 students. Nasser *et al.*, (2008) conduct a study on student satisfaction in Lebanese educational institutions and find that there is an inverse relationship between the class levels and the satisfaction levels; that is, the higher the levels, the lower the ratings of the satisfaction levels. The situation is similar in this study too. Corts *et al.*, (2000) conclude in their study that there is no significant difference between junior and senior students' perceptions of satisfaction. Hill (1995) finds that students' expectations are stable over time, which suggests that they were probably formed prior to arrival at the university. However, students who have been studying for longer perceived there was a reduction in their quality experience indicating that this was less stable.

Munteanu *et al.*, (2010) conduct a study with regards to the influence of the programme of study on student satisfaction factors and find that differences exist among specialisations of study and the most satisfied students are those in the business information systems and marketing. The students in the commerce-tourism and also the international business programme seem to be less satisfied. In this study, international business students seem to be less satisfied too. This situation provides some indication to the educational institutions, which will be addressed by this study in the subsequent section.

This study also reported the influence of semester grade on the level of student satisfaction with regards to the student support facilities and the class sizes. Better performing students are more satisfied with the student support facilities and class sizes than the poor performers. Wilson's (2002) study shows that there is no statistical difference between student performance and the class sizes. Liu and Jung (1980) observe some moderate relationships in their study. Lavin (1965) as well as Centra and Rock (1983) discover a significant relationship between grades and student satisfaction. Aitken (1982) concludes that academic performance is one of the factors that can determine satisfaction. Pike (1991) discovers an inverse relationship between satisfaction and the grades. Another related observation is by Oldfield and Baron (2000) who confirm that the mean score of the final year students was lower than those of the first year thus

suggesting that as students become more experienced in the higher educational settings, they seem to be more critical in their perceptions of the service quality.

Results of the independent t-tests showed that the only factor which is significant is textbooks and tuition fees. The tuition-based model has been significant in many educational institutions. According to Rolfe (2002), the introduction of the tuition fees may affect the students from being free recipients to “customers”. When students feel that they are customers, they may expect “value for money” (Narasimhan, 2001; and Watson, 2003). In view of that, their satisfaction should be important to the educational institutions (Thomas and Galambos, 2004). Students also want value for their investments in purchasing the textbooks, availability in the local bookstores, as well as usefulness in enhancing the modules. The study of Douglas *et al.*’s., (2006) reported similar findings.

With regards to gender, the results of this study reported that males are more satisfied than the females on the factor. Many studies on gender and satisfaction produce mixed results. Soutar and Mc Neil’s (1996) study indicates that there is a significant relationship between gender and satisfaction. With regards to the satisfaction levels between males and females, studies by Renzi *et al.*, (1993) and Umbach and Porter (2002) indicate that males are more satisfied than females and the finding is similar in this study too. As for nationality, the results of this study showed that international students are more satisfied than the local students on the textbook and tuition fees issues. Arambewela and Hall’s (2009) study on international students’ satisfaction indicates that the importance of the quality factors related to both educational and non-educational services varies among nationality groups. Their study discovered the variations of the level of satisfaction with university services, and students from China and Indonesia seem to be more satisfied with the services as compared to the Indian or Thai students. Their study also highlights the importance of considering the diversity of cultures, language and values in determining the level of student satisfaction.

In summary, factor analysis resulted in 12 factors being identified from the 53 satisfaction items. The results of the ANOVA tests revealed five factors to be significant between student support facilities, class sizes, classroom environment, business procedures, and relationship with teaching staff and the demographic profiles of year of study, programme of study, and the semester grade. The results of the independent t-test showed that only the textbooks and tuition fees factor seems to be significant with gender and nationality.

### **Conclusion and Implications**

In conclusion, this study has identified several underlying dimensions of business student satisfaction in the Malaysian PHE environment. The influences of demographic factors on the results were also highlighted.

By identifying the factors that drive student satisfaction, we provide new insights into the general evaluative dimensions of student satisfaction. Through increased understanding of these factors or underlying dimensions that contribute to student satisfaction, education providers may be able to focus on a smaller set of Key Performance Indicators (KPIs) than some studies would suggest. Whereas Douglas *et al.*, (2006) identify 60 variables that influence student satisfaction, we suggest that there are

in fact 12 broad areas that are important to students. Such knowledge may assist educational institutions to improve their strategies with regards to the people, process, physical evidence, service environment and other factors aimed at satisfying student needs.

The results also revealed the influence the demographic factors have on the levels of business student satisfaction in the Malaysian PHE environment. As year of study, programme of study and semester grades have significant impact on factors such as student support facilities and class sizes, providing good support facilities and determining reasonable class sizes are crucial. Positive students' experiences are very important and from the educational institution's point of view, satisfied students are more likely to stay with the institution and stand more chance to excel in their studies. Gender and nationality tend to have significant impact on textbooks and tuition fees. Students are the recipients of the educational services, as such; they want value for the textbooks that they purchased and the tuition fees that they paid. The fees charged should therefore, reflect the value delivered. Towards generating revenue, the educational institutions should not overlook the possibilities of losing students to competitors if students are not satisfied with the fees imposed on them.

This study provides useful insights into the dimensions of business student satisfaction; however, care must be taken when generalising the results as this study was undertaken in the context of the Malaysian private educational environment. Future studies could be undertaken to identify the dimensions of student satisfaction in other contexts as well.

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## Dimensions driving Business Student Satisfaction in Higher Education

### Appendix 1

**Table I Studies in Higher Education adopting SERVQUAL and SERVPERF Models**

Author/ Year/Title	Journal	Methodology
Cuthbert (1996a,b) “Managing service quality in HE: is SERVQUAL the answer? Part 1” “Managing service quality in HE: is SERVQUAL the answer? Part 2”	Managing Service Quality	Questionnaire distribution Modified SERVQUAL
Oldfield and Baron (2000) “Student perceptions of service quality in a UK university business and management faculty”	Quality Assurance in Education	Focus groups Questionnaire distribution Modified SERVQUAL
Bigne <i>et al.</i> , (2003) “Perceived quality and satisfaction in multiservice organisations: the case of Spanish public services”	Journal of Services Marketing	Focus groups Questionnaire distribution SERVPERF
LeBlanc and Nguyen (1997) “Searching for excellence in business education: an exploratory study of customer impressions of service quality”	International Journal of Educational Management	Focus groups Modified SERVQUAL
Soutar and McNeil (1996) “Measuring service quality in a tertiary institution”	Journal of Educational Administration	Questionnaire distribution Modified SERVQUAL
Athiyaman (1997) “Linking student satisfaction and service quality perceptions: the case of university education”	European Journal of Marketing	Focus groups Modified SERVQUAL
Prugsamatz <i>et al.</i> , (2006) “Comparing alternative instruments to measure service quality in higher education”, Quality Assurance in Education	Quality Assurance in Education	Questionnaire distribution SERVQUAL
Arambewela and Hall (2009) “An empirical model of international student satisfaction”	Asia Pacific Journal of Marketing	Questionnaire distribution Modified SERVQUAL
Mai (2005) “A comparative study between UK and US: The student satisfaction in Higher Education and its influential factors”	Journal of Marketing Management	Questionnaire distribution Modified SERVQUAL
Brochado (2009) “Comparing alternative instruments to measure service quality in higher education”	Quality Assurance in Education	Questionnaire distribution SERVQUAL, SERVPERF, HedPERF

## Appendix 2

**Table II Other Models of Service Quality and Student Satisfaction**

Author/ Year/Title	Journal	Methodology
Elliot and Shin (2002) “Student Satisfaction: an alternative approach to assessing this important concept”	Journal of Education Policy and Management	Questionnaire distribution Utilised top 20 educational attributes (SSI)
Guolla (1999) “Assessing the teaching quality to student satisfaction relationship: Applied customer satisfaction research in the classroom”, Journal of Marketing Theory and Practice	Journal of Marketing Theory and Practice	Questionnaire distribution Utilised SEEQ instrument with 7 attributes
Smith (2004) “Off-campus support in distance learning-how do our students define quality?”, Quality Assurance in Education	Quality Assurance in Education	Questionnaire distribution Structured and unstructured elements of student perceptions –components of an off-campus support system and the factors determining the quality of off-campus support system
Petrzellis <i>et al.</i> , (2006) “Student satisfaction and quality of service in Italian universities”	Managing Service Quality	Questionnaire distribution 19 service attributes of the university were used
Gruber <i>et al.</i> , (2010) “Examining student satisfaction with higher education service -Using a new measurement tool”	International Journal of Public Sector Management	Questionnaire distribution 15 dimensions were utilised
Douglas <i>et al.</i> , (2006) “Measuring student satisfaction at a UK university”	Quality Assurance in Education	Questionnaire distribution, followed by focus groups Three elements of a “service-product bundle” were used

## Appendix 3

**Table III Studies conducted in Malaysia on Service Quality and Student Satisfaction**

Author/ / Year/ Title	Journal	Methodology
Yunus <i>et al.</i> , (2009) “Service quality dimensions, perceive value and customer satisfaction: ABC Relationship model testing”	IBej	In-depth interviews Questionnaire distribution Modified SERVQUAL
Poh and Samah (2006) “Measuring Students’ Satisfaction for Quality Education in E-Learning University”	UNITAR E-Journal	Questionnaire distribution Modified SERVQUAL
Illias <i>et al.</i> , (2008) “Student Satisfaction and Service Quality: Any Differences in Demographic Factors?”	International Business Research	Questionnaire distribution SERVQUAL
Hishamuddin <i>et al.</i> , (2008) “Service Quality and Student Satisfaction: A Case Study at Private Higher Education Institutions”	International Business Research	Questionnaire distribution SERVQUAL
Sapri <i>et al.</i> , (2009) “Factors that influence Student’s level of satisfaction with regards to higher education facilities services”	Malaysian Journal of Real Estate	Questionnaire distribution Model of Value Chain concept derived from review of literature in facilities management
Shekarchizadeh <i>et al.</i> , (2011) “SERVQUAL in Malaysian Universities: perspectives of international universities”	Business Process Management Journal	Questionnaire distribution Modified SERVQUAL

## Appendix 4



**Table IV Results of Principal Component Analysis -Factor Loadings**

Underlying Dimensions that Drive Student Satisfaction	Factor Loading	% of Variance Explained	Cronbach's Alpha
<b>Factor 1: Professional Comfortable Environment</b>		<b>8.789</b>	<b>0.897</b>
The sense of competence, confidence and professionalism conveyed by the ambience in the tutorials	0.704		
The feelings that your best interests are being served	0.685		
The sense of competence, confidence and professionalism conveyed by the ambience in the lectures	0.655		
The feelings that rewards-marks/ grades gained are consistent with the efforts you put into assessment	0.608		
The university environment's ability to make you feel comfortable	0.574		
The competence of staff	0.560		
The availability of staff	0.531		
The respect for your feelings, concerns and opinion	0.507		
<b>Factor 2: Student Assessments and Learning Experiences</b>		<b>7.556</b>	<b>0.849</b>
The appropriateness of the method of assessment-coursework and/ or examination	0.714		
The appropriateness of the style of assessment- individual and/ or group work	0.693		
The course workload	0.671		
The level/ difficulty of subject content	0.603		
The appropriateness of the quantity of assessment	0.601		
The way your time table is organised	0.419		
<b>Factor 3: Classroom Environment</b>		<b>7.231</b>	<b>0.847</b>
The decoration	0.744		
The layout	0.703		
The furnishings	0.695		
The teaching and learning equipment, for example, projectors, screens, whiteboards	0.587		
The lighting	0.547		
The level of cleanliness	0.543		
The lecture and tutorial rooms overall	0.456		
<b>Factor 4: Lecture and Tutorial Facilitating Goods</b>		<b>6.580</b>	<b>0.879</b>
Supplementary tutorial materials/ handouts	0.779		
Supplementary lecture materials/ handout	0.773		
The tutorials overall	0.606		
The power point/ slides presentation- where applicable	0.599		
The lectures overall	0.519		
<b>Factor 5: Textbooks and Tuition Fees</b>		<b>5.625</b>	<b>0.787</b>
The textbook value for money	0.665		
The tuition fees	0.646		
The textbooks' availability in local bookstores	0.645		
The textbooks' usefulness in enhancing understanding of the modules	0.617		
The recommended core textbooks overall	0.576		
<b>Factor 6: Student Support Facilities</b>		<b>5.466</b>	<b>0.784</b>
The IT facilities overall	0.696		
The learning resources centre overall	0.684		
The vending machines overall	0.609		
The on-campus cafeteria/ canteen facilities	0.487		
The recreational facilities overall	0.472		
<b>Factor 7: Business Procedures</b>		<b>5.019</b>	<b>0.766</b>
The availability of parking	0.704		
The security measures overall	0.671		
The registration procedures	0.578		
The toilet facilities overall	0.510		
The accommodation facilities/ services overall	0.493		
<b>Factor 8: Relationship with teaching staff</b>		<b>4.668</b>	<b>0.861</b>
The approachability of teaching staff	0.716		
The friendliness of teaching staff	0.697		
The concern shown when you have a problem	0.551		
<b>Factor 9: Knowledgeable and Responsive Faculty</b>		<b>4.339</b>	<b>0.821</b>
The teaching ability of staff	0.624		
The consistency of teaching quality irrespective of the lecturer	0.579		
The responsiveness of teaching staff to requests	0.454		
The subject expertise of the staff	0.386		
<b>Factor 10: Staff Helpfulness</b>		<b>3.771</b>	<b>0.743</b>
The helpfulness of administrative staff	0.754		
The helpfulness of technical staff	0.613		
<b>Factor 11: Feedback</b>		<b>2.953</b>	<b>0.778</b>
The usefulness of feedback on your performance	0.615		
The promptness of feedback on your performance	0.607		
<b>Factor 12: Class sizes</b>		<b>2.576</b>	
Class sizes	0.694		

## Appendix 5

**Table V Summary of ANOVA Results**

Satisfaction Dimensions (Factors)	Descriptive Variables	Sig. Differences( at five per cent significance level)
Student Support Facilities	Year of Study	Y1>Y2
Class sizes		Y1 >Y3
Classroom Environment	Programme of Study	Y1>Y3
Student Support Facilities		Y2>Y3
Business Procedures		OT>AC
Relationship with teaching staff		OT>IB
Class sizes		OT>IB
Student Support Facilities		BA>IB
		AC>IB
		MK>IB
		FP>IB
	Semester Grade	A>B
		A>C
		B>D

## Appendix 6

**Table VI Summary of independent t-tests results**

Satisfaction Dimensions (Factors)	Descriptive Variables	Sig. Differences (at five per cent significance level)
Textbooks and Tuition Fees	Gender	M>F
Textbooks and Tuition Fees	Nationality	I>L